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CASE

OF

FRAMBOESIA GUINEAENSIS,

OR

YAWS OF THE AFRICAN NEGROES;

WITH SOME ATTEMPT TO FIX THE EXACT CHARACTER OF
THAT MORBID POISON:

By JOSEPH ADAMS, M.D. C.M.S.
OF THE ISLAND OF MADEIRA.

EXTRACTED FROM THE

MEMOIRS OF THE MEDICAL SOCIETY OF LONDON.

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COUNCIL OF THE MEDICAL SOCIETY OF
LONDON,

19th JANUARY 1801.

RESOLVED,

THAT the Silver Medal annually given by this SOCIETY to a Corresponding Member, or other Person not a Fellow, for the best Essay read within the Year, be adjudged to JOSEPH ADAMS, M.D. of the Island of Madeira, for his Dissertation on *Frambæsia Guineænsis*.

THOMAS WHEELER, Registrar.

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*With some Attempt to fix the exact Character
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BY JOSEPH ADAMS, M. D. C. M. S.
OF THE ISLAND OF MADEIRA.

Communicated in a Letter to
JAMES SIMS, M. D. PRES. M. S.

Read JUNE 30, 1800.

IN the latter end of September 1798, a young Danish nobleman, in the naval service of his king, was left at this island, his health not permitting him to continue his voyage to the West Indies. He complained of a slight but tolerably regular intermittent, attended, during the paroxysm, with a spasmodic contraction of the fauces. For this he found some relief in bark, the power of opening
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his mouth returning as the fever went off. This relief was only temporary; nor were other tonics attended with better success. He took a grain of calomel daily for ten days, during which his mouth became slightly affected, and his fever completely left him. It however returned as his gums recovered, and recourse was had to sal ammoniac, myrrh, and chamomile. These seemed to succeed after five days use, but the remission of fever was attended with an universal pimply eruption over the face, and inflammation of the throat.

In the space of two days the eruption was universal, excepting on his hands and feet. The throat became ulcered, and the glans penis was covered with several small but not painful ulcers. For several days the ulcers spread on both these places, and the pustules continued to increase: his fever returned, and the throat and pustules of the face were attended with considerable pain. The latter had arrived, in less than a week, to the size of small-pox pustules; and the interstitial part of the skin being redder than usual, gave the whole very much the appearance of that disease. The figure of the pustule was indeed somewhat flatter, or rather more horizontal,
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the edges rising perpendicular from the skin, and the surface being plain. There wanted also that appearance of indentation which very soon discovers itself in small-pox, and frequently in the chicken-pox also. The throat had precisely the appearance of a venereal sore throat, but was more painful.

The continual increase of the pustules after those of the small-pox should have scabbed; precluded all doubts concerning that or any similar morbid poison. In order, however, to satisfy myself still further, I had removed the pellicle from one of the pustules, and; instead of the slough peculiar to the small-pox, found only a rough sloughy surface attached to the subjacent cellular membrane.

By the application of *aq. phageden.* the ulcers on the glans penis soon became stationary, put on a better appearance, and healed. It was therefore evident they were not venereal, and as there was every reason to believe the pustules only differed from these ulcers in being covered by a thicker cuticle, it was highly probable that the cure of them also was within the power of the constitution. It seemed therefore prudent to watch the disease, without attempting to interrupt it.

The eruptions continued to increase in number and size to such a degree, that the forenefs, abstracted from the pain which was confined to thofe in the face, rendered life fcarcely tolerable. Before the end of the month, my patient counted, befide a number of fmaller ones, 56 large fores, fome of which being of an oval form, were not lefs than from two to three inches in their largeft diameter. He was befide this reduced to a fkeleton; for though his appetite was throughout the whole better than could be expected, yet the ftate of his throat prevented his fwallowing even liquids without very great pain. From this time no new ones appeared, and all of them began to fcab. If therefore the difeafe was yaws, which I had long fufpected, the prefent feemed the time at which, by the concurrence of moft authors, mercury may be exhibited to advantage. The corrofive fublimate, though given in very fmall dofes, was more than the ftomach would bear: it was therefore given up almoft as foon as tried; and, as moft of the fores fhewed a difpofition to fcab, no other preparation of mercury was exhibited. The fever continued all this while with as much violence as before,

fore, and the state of the throat preventing the exhibition of bark by the mouth, it was given by clyster with an opiate. Though at first it did not lessen the fever, yet the general irritability of the constitution was much abated, and by degrees the fever subsided. The following had been the appearance and progress of the pustules: The cuticle shrunk and hardened into a scab, with the pus underneath it. In this manner it remained for a few days, when a suppuration commenced at the edges of, and under the scab, from which matter issued, and either raised part of the scab, or was diffused over it, or attached to its circumference, and hardened upon it. This was repeated an indefinite number of times, and each time attended with a return of fever. If any hairs were in the neighbourhood of a pustule, they were so incrusted with pus as to make them appear white. The accumulation and hardening of matter over the scab, gave some of them the appearance of being studded with tubercles: in others, the accumulation was more regular, so as to exhibit a horny appearance: the colour was, for the most part, of a light brown; but where blood was mixed with the pus, the complexion was

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redder. Wherever the inflammation ran high, the pus was thinner, and never hardened on the part. This happened only on a few pustules of the face.

In about two months from the first appearance of the eruption, the fever returned with as much violence as before the eruption, particularly those about the face continued dry, and, in a few days, a slight separation of the edges of some of the scabs showed a sound skin underneath. I had therefore no doubt but that the return of fever was symptomatic of a new action taking place, namely, that of desquamation and the formation of new skin, as the former fevers had been symptomatic of eruption and suppuration. This disposition to skin was not universal, some of the pustules still continuing to extend in the manner before described. They were however few, unattended with pain; and the new suppuration, instead of extending round the whole scab, was confined to an inconsiderable portion of the edge. On removing any of the scabs, a fungus, covered in some instances by a thin cuticle, was found shooting out of the foveolus, that had been the seat of the slough.

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The ulcer on the throat had made such ravages, that I was fearful the whole uvula would be destroyed. The left side was entirely lost, and what remained, instead of hanging in its natural form, was drawn by its muscular fibres to the arch formed by the right tonsil. The voice was as much affected as when the uvula is lost by a venereal ulcer. As the other symptoms abated, however, the throat recovered nearly its original figure, and the voice its natural tone. Though the violence of the fever had now subsided, yet it returned occasionally, and was constantly attended with a new suppuration in some of the pustules, or rather at a small point in the edges of some of them. The paroxysms lasted, at intervals, for three or four days; during which, however, the appetite continued, and, at the remissions, was that of a convalescent. At the end of six months from the first symptoms of fever, and four from the eruption, most of the pustules, particularly those on the legs, and many about the body, had scaled off, the throat was nearly well, and this succession of symptoms was to be ascribed to the resources of the constitution, which was only

supported, without any attempt at altering its actions.

I was unacquainted with yaws but by description, and my patient had been ten months absent from the West Indies before he felt any indisposition. During his stay there, all he recollected that might have exposed him to the disease was, that being once with a physician, who was visiting the sick negroes of a plantation, he was desired to keep at a distance from one of them. It was therefore fortunate, that enough of the pustules still remained in a state of partial suppuration, to satisfy Dr. Wright, who at this time touched at our island in his return to the West Indies, that the disease was truly yaws. As it was of the most violent species, the pustules being large as well as numerous, it may be right to distinguish between such symptoms as are peculiar to this state of the disease, and such as are common to all. The fever was much greater than usual, the generality of patients showing little or none; but this variety is not greater than the secondary stage of the venereal disease, which is often attended with fever, counterfeiting the intermittent. This
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sometimes goes off as the eruption appears, and sometimes the eruption is preceded by no fever. The spasm on the fauces must be considered as an accidental circumstance. The disease does not usually attack the throat, but instances of it are mentioned *. I have before remarked, that its appearance no way differed from the venereal ulcer on that part. The surrounding inflammation was indeed more considerable, continued longer, and the pain was much greater. The following I consider as the genuine character of the disease, by which it may be distinguished from all other morbid poisons.

I have already remarked the figure of the pustules in their early stage. If at this time the cuticle is taken off, you find under it a rough whitish surface, consisting partly of slough and partly of living animal matter. This I conjecture, because, on the closest observation, the pus appeared formed over the surface, and not at the edges only. Where the cuticle is left, the matter usually pushes out at the extremities, but so slowly as only to harden upon it. Suppuration is not con-

* See Hunter's Treatise on the Venereal Disease, p. 383.

stantly going on in any of the pustules, excepting where the inflammation is very high, as was the case in the face. In other parts, some pustules appear to suppurate at one time and some at another, but commonly several at the same time. Hence the drying and hardening of a scab is no criterion that ulceration has ceased, and that the part will skin. Even the same individual pustule would heal in one part while it spreads in another.

From the time, however, that the scabs begin to dry, may be called the second stage of the disease; and if at this time you break off the scab, you find a red fungus shooting up under it.

There were no pits left after healing in any part but the face. In these the inflammation was so violent, and the matter so thin, that, instead of hardening under or upon the cuticle, it proved more than any superficial dressing would absorb. Hence, instead of a scab we had an open sore, and instead of a fungus shooting up, the part skinned over, without any previous granulation. This is analogous to what I have observed in small-pox, and all other morbid poisons *.

* See Morbid Poisons, page 117.

To give the character then in as few words as possible:—If in the early stage of the pustule you remove the *cuticle*, you are to expect a ragged but moist slough. In a later stage, if you remove the *scab*, you will find a fungus, varying in shape, size, and colour, according to the period of the yaw. Where the inflammation is very high, you will neither have scab nor fungus; but when supuration ceases, the part will skin over, and leave a pit.

Authors have generally remarked, that all the hairs near the yaws turn white. This was not permanent in my patient. He had indeed no hairs near any of the pustules that granulated. On the face, where pits remained, the hair was not renewed for more than two months. The few that then grew were of the natural colour. I have already remarked some appeared white, from being covered with pus. These were about the eye-brows, and recovered their colour on being washed. This patient had the fair complexion of the natives of a northern latitude. It is probable that, in darker people, the hair may turn white, as we know it sometimes does after cicatrices from common wounds in the head, and as frequently

frequently happens in the black hair of other animals.

Having thus described the character of the disease, I shall offer a history of it, founded on observation, and leading to practice.

1st. The violence of the disease must be in proportion to the susceptibility of the constitution for it.

2d. When the susceptibility is great, it is likely to be proportionably permanent, and, as long as it continues, the matter of each pustule will infect those parts it comes in contact with. Hence the spreading of the same individual pustule or scab.

3d. That nothing will destroy the susceptibility of a part, or the whole constitution, but its full action. Hence,

4thly, Though the action may be suspended for a time, by exciting a different action, yet, the susceptibility still remaining, the action will return as soon as that which superseded it ceases.

To illustrate this theory the better, I shall contrast yaws with the only two morbid poisons to which it bears any analogy, without exactly resembling either.

The venereal is a poison of which the constitution

stitution is for ever susceptible, and which it has no power of curing in itself: consequently the matter from every ulcer affects the contiguous parts, and the disease is kept up for ever, or till a more powerful stimulus is applied; after which, on a fresh application of the infection, the constitution is found as susceptible as before.

The small-pox is a poison of which the constitution is no longer susceptible, after having gone through a certain fever and eruption, occasioned by the application of its poison. Consequently, from this time, the contiguous parts being insensible to the variolous irritation, all the pustules heal without spreading, and the constitution is found to have lost its susceptibility on a fresh exposure to the infection.

Of yaws, on the contrary, the constitution remains susceptible after the eruption and fever (if any happen to attend it) are completed. Hence, as in the venereal, the pus affects the contiguous parts. But this susceptibility only continues for a time, uncertain according to the difference of constitution, or state of it at the time. When the susceptibility ceases, the parts heal as in the small-pox, though

though more slowly, from the slow progress of all the other actions. When healed, the constitution has for ever lost its susceptibility for the disease.

In one point they all agree, namely, that they may be suspended for a time by another more powerful stimulus, but will show themselves as soon as the effect of that stimulus ceases. When it happens that the constitution is infected by absorption from a local venereal ulcer, the consequent disease will never show itself while the mercurial irritation which cured the chancre continues; but when that irritation ceases, the disease will appear in the skin, fauces, or bones*.

In the small-pox, inoculation has taught us, that, after the infection is received by a constitution susceptible of its impression, the disease may be for a time superseded by some other irritation, most commonly an erysipelatous fever, or the measles. As soon, however, as these cease, the small-pox resumes its action, and continues its course.

* As this rests on a long deduction of facts and reasoning, the reader who has not previously studied the subject must be referred to Hunter on the Venereal Disease, p. 305, and Morbid Poisons, p. 235, & seq.

In yaws, the progress of which is particularly slow, it appears that, even after the disease has proceeded to suppuration, it may be superseded for a time by mercury. But if that remedy has been applied before the full action of the disease, namely, scabbing, has taken place, whenever the mercurial irritation ceases, the yaws resume its action, which it continues as long as the constitutional susceptibility remains.

To conclude, the constitution is always susceptible of the venereal poison; so that the disease will spread till superseded by a more violent irritation; and return on a fresh application of the poison. The small-pox will cure itself as soon as the suppurative fever is over; and, with the disease, the susceptibility for it is extinguished for ever.

In yaws the suppuration, whether attended with fever or not, does not immediately relieve the constitution from its susceptibility to the disease; nor is there any remedy yet known that will cure it. But this susceptibility ceases by degrees, after which the parts heal, and the susceptibility never returns.

Though only the venereal is absolutely incurable, excepting by a remedy, yet all three may

may be arrested, at certain stages, without being cured.

That such is the nature of yaws, appears from every authority I have been able to find, and from my own observation. The anonymous and modest author of a paper in the Edinburgh Medical Essays, Dr. Hillary, and Sauvage, all agree, that if mercury is given before all the yaws are scabbed over, the best that can happen is a return of the disease when the mercurial irritation ceases; but all of them, as well as Mr. Hunter, mention very calamitous events that have sometimes followed the early exhibition of mercury. The two first mentioned writers (the only two practical ones) never seem to have left the disease to its natural cure, and differ much in their opinion of such a practice. Hillary, with his usual hastiness, conceives it would always kill the patient; but the other has the modesty to believe it would probably get well of itself, though he never had the courage to try. Both agree that, after salivation, some of the yaws will obstinately resist, and that it will be necessary to rub them with caustic to the bottom.

Such was the exact progress of the disease
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with the Count, to whom mercury might be said never to have been exhibited, or to have been exhibited so slightly, as to produce no effect. When the scabs began to fall off, they continued to do so, several every day; but, on the arms, some remained, which it was found necessary to rub with caustic. Even these would sometimes ulcerate afresh. Perhaps they were not sufficiently cauterized. They were at last left to themselves, and healed spontaneously.

I should be unwilling to fix a practice from any single instance: but the present case, by the accounts of all the authors above referred to, and by Dr. Wright's authority, healed earlier than is usual, where the pustules are so numerous *. I shall however not scruple to give it as a general caution, in all cases of ulcer or eruption, whether proceeding from morbid poisons or not, never to give mercury till the disease explains itself. Should it prove venereal, the remedy cannot be too soon exhibited. Should it prove a morbid poison of a different kind, it would be adviseable to wait as long as we can with prudence, to see

* About thirty weeks from the commencement of the eruption.

whether the disease is within the powers of the constitution, in which case it may be best to interrupt it as little as possible. If, on the contrary, we see no disposition to heal, and the disease rapidly gaining ground, though we cannot find a remedy more likely to succeed than mercury, it should be given with great caution.

I cannot conclude this paper, perhaps already too long, without an inquiry whether the leprosy of the Jews was yaws or not. In these remarks I shall confine myself to the Vulgate, as much more pointed in characterising the disease, though there is nothing in the Septuagint that contradicts it.

“When,” says the divine lawgiver*, “a man shall have a rising, a scab, or a bright spot;” this constitutes the early stage, when the pimple is just forming, or the cuticle broken off, so as to discover the slough underneath, splendid from the exudation of a small quantity of matter, or when the matter begins to harden into a scab. In the second stage, viz. when the loss of the cuticle and contraction of the slough has showed a depression, so that the “plague was deeper than

* Levit. chap. 13.

the skin," and the matter had encrusted the "hair, so as to turn it white," the disease was considered as beyond a doubt, and the subject pronounced unclean. But if no loss of substance appeared, and the spot was not lower than the sound part, nor the hair altered, the subject was to be shut up for a week, at the end of which, if the disease was stationary, seven days more were required. If the disease now became a dry scab, of a darker complexion, without having spread, it was to be considered a common scab, and the subject readmitted into the camp. But if the scab had increased between the first and second examination, the subject was to be again secluded for a future examination, and if it then appeared that the scab continued to spread, he was to be pronounced unclean.

In the next stage, the excrescences being all white, and the hair also, the priest was directed to look for the red fungus underneath, and, if he found "quick raw flesh in the rising," he was to consider the disease an old [or confirmed] leprosy, and exclude the patient accordingly.

Lastly, he was to determine when the patient might be considered as no longer infec-

tious, and readmitted into the camp. For this purpose every part of the body was to be examined, and if all the cicatrices were covered with a new cuticle, which, in this case, will be opaque and "white," the subject was to be declared clean; but if any of the fungus flesh remained uncovered, or covered only with a thin transparent cuticle (in both which cases the appearances will be that of "raw flesh"), the priest was directed to seclude the subject, till, on a future examination, every part appeared white, and then, after the necessary ablutions, he was to be readmitted into the camp *. The rest of the passage relates to an old cicatrix, or an open sore of any kind, becoming the seat of a leprous pustule.

The above description exactly resembles yaws, and no other disease now known, in every material point: in the vesicle, or pustule; in the depression from the loss of the cuticle, and the contraction of the sloughy

* Dr. Mead supposes, that this last passage, ver. 12 and 13. relates to a different disease: but there is no foundation for such an opinion; and whoever carefully compares Dr. Mead with the text, will be convinced of the fallacy of the Doctor's arguments.

part beneath ; in the subsequent fungus ; in the disposition of the scab to spread ; in the changing the hair to white ; in the infectious property of the disease ; in the slowness of its progress ; and, lastly, in the constitution being equal to its cure. In most of these it differs from the Arabian leprosy (a disease well known in the islands), and, in many particulars, from the *lepra grecorum*.

It is most probable, by the prudent measures pursued during the long march through the wilderness, that the yaws was altogether extirpated from the Jews before their arrival in Palestine. For though leprosy is spoken of in other passages, it was evidently a different disease. The cases of Moses and Miriam are not to our purpose, as they were both antecedent to this event. The case of Naaman (11 Kings, chap. v.) was evidently different. First, it was incurable by any human means, or by the powers of the constitution. Next, the universal whiteness, which was considered as a symptom of recovery from the former disease, appears in this to characterize its worst stage. For, after the malediction of the prophet, his servant "went out a leper, as white as snow." Thirdly, this disease does
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not appear to have been infectious; else Naaman would not have spoken of the King his master as "leaning on his hand" (by which he must at least have been near his person) when performing his devotions, or "worshipping in the house of Rimmon." Lastly, there is no intimation that Naaman's wife, or any of his family, were infected, or that his servant was apprehensive of being so.

It is however probable, that the two diseases, having the same name, might be confounded, and, when one of them had disappeared, the other might continue to be treated like the former. For though it still remains a doubt, whether the Arabian leprosy be infectious, and is a matter of certainty, that, if at all, it is very little so, yet that it is often hereditary is universally allowed. For these reasons, probably too on account of the miserable appearance of some of the sufferers, it is the policy of most nations inhabiting warm climates, to exclude them from society. On this account probably it was, that the prophet did not go out to Naaman, but sent him a message into the street. For the same reason he might not permit his servant to accept
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the smallest present; and, when he found that he had deceived him, pronounced the curse on him and “his seed for ever.” This may appear a cruel sentence: those who think so should consider the punishment inflicted on the culprit as necessarily implying a disposition to the same disease in his progeny. But a careful examination of the passage will at once show, that the punishment was confined to the culprit. “Is this a time (says the prophet, alluding to the distressed state of the country) to receive money and garments, and olive yards, and men servants and women servants.”—But perhaps you look forward to a more settled state of things. “The leprosy of Naaman cleave to thee and thy seed for ever.” Go, you have a disease which will exclude you from that intercourse with the world, by which only you could enjoy your ill-gotten wealth; nor can you expect your posterity to inherit it, as the law will preclude you from having any.

Of the four lepers mentioned at the siege of Samaria *, we have no description. We find, however, that they were excluded from

* 11 Kings, chap. vii.

the city, and probably overlooked during the general distress. In this situation they resolved to offer themselves to the enemy; which they did about twilight. Those who have seen the worst stages of the Arabian leprosy, need not be told how horrible the countenance appears. It is well known, that the round eyes, flat nose, red tuberculated visage, exhibit so much the aspect of a lion; that the disease has been called *leontiasis*, as that on the leg and foot has been denominated *elephantiasis*.

Four such objects as these appearing by uncertain light, unarmed, and without any of that hurry or agitation which attend deserters, might, in those days, very naturally suggest, to the outposts, the idea of supernatural agency; and, when the panic once became general, different reasons would be assigned for it in different parts of the camp. I ought to remark, that there is nothing in this that invalidates the testimony of miraculous agency; the only unequivocal proof of which, as an ingenious and learned writer observes, is prophecy. Nothing less than inspiration could have taught Elisha, during a time of universal distress; that, on the fol-
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lowing day, every thing would be abundant; or the fall of the nobleman who doubted the truth of such a prediction. Thus the miracle is quite as complete, though less complicated; nor is this statement any way contradicted by the written account.

The leprosy of King Uzziah *, appears also to have been incurable; for, immediately on its discovery, a successor was appointed; and we are told that the disease continued, and he lived in a separate house during the rest of his days.

* 11 Chron. chap. xxvi.







